

### SEQUENCE OF OPERATION

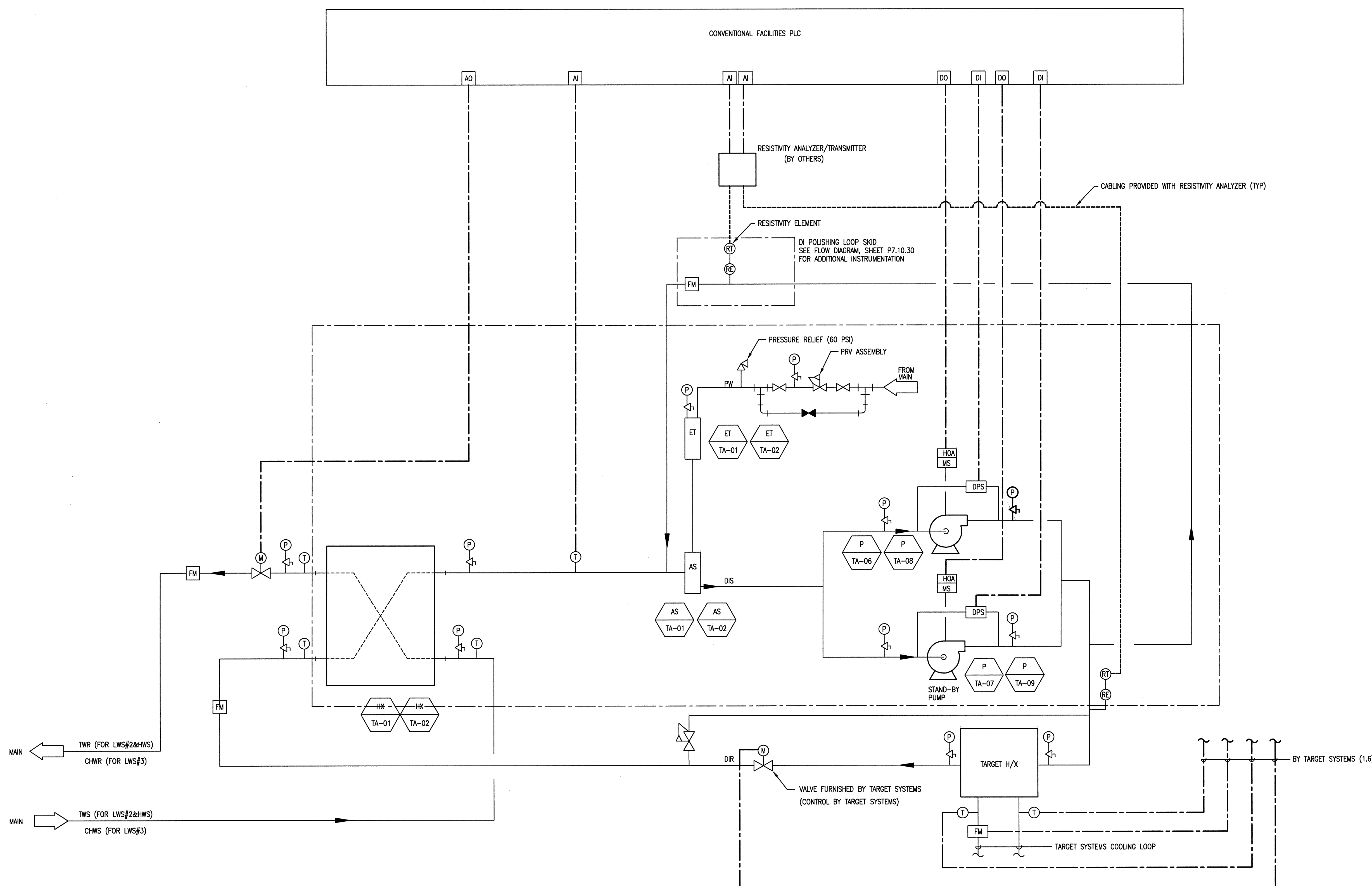
1. GENERAL:  
THE SYSTEM PUMP SHALL BE ENERGIZED THROUGH THE CONTROL SYSTEM. PUMP SHALL RUN CONTINUOUSLY. SHOULD A PUMP FAIL TO START, OR FAIL DURING OPERATION, THE CONTROL SYSTEM SHALL DEENERGIZE THE FAILED PUMP AND SEND A SIGNAL TO ENERGIZE THE STAND-BY PUMP AND INDICATE AN ALARM CONDITION.
2. DI WATER TEMPERATURE:  
A TEMPERATURE SENSOR IN THE DI WATER SUPPLY LINE SHALL PROVIDE INPUT TO THE CONTROL SYSTEM. THE CONTROL SYSTEM SHALL MODULATE THE CONTROL VALVE IN THE TOWER WATER OR CHILLED WATER RETURN LINE AS REQUIRED TO MAINTAIN THE DI WATER SUPPLY TEMPERATURE AT 87 °F FOR LW62/7HWS AND 70°F FOR LWS #3.
3. RESISTIVITY:  
A RESISTIVITY ANALYZER / TRANSMITTER WITH SENSORS IN THE MAIN DI WATER CIRCULATING LOOP AND DI POLISHING LOOP SHALL PROVIDE INPUT TO THE CONTROL SYSTEM. SHOULD THE RESISTIVITY OF THE MAIN LOOP DROP BELOW 1 MED-OM AN ALARM CONDITION SHALL BE SHOWN AT THE CONTROL SYSTEM. SHOULD THE POLISH LOOP RESISTIVITY DROP BELOW 1 MED-OM AN ALARM INDICATION SHALL BE SHOWN AT THE CONTROL SYSTEM.

## GENERAL NOTES

1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH P7.10.30 AND P7.10.31.  
LWS#3 IS FED OFF CHILLED WATER. LWS#2&HWS ARE FED OFF TWS&R

## CONTROL POINT LIST - TARGET BUILDING DI WATER SYSTEM - LWS#3 / LWS#2&amp; HWS (HEAVY WATER STATION)

BUILDING: TARGET BUILDING		SOFTWARE																											
		OUTPUT FROM DDC				INPUT TO DDC				ALARMS		APPLICATIONS																	
		DIGITAL		ANALOG		DIGITAL		ANALOG		DIGITAL	ANALOG																		
POINT DESCRIPTION	GRAPHIC DISPLAY (WINDOWS BASED SOFTWARE)	CONTROL RELAY	HANDS/OFF/AUTO	OPEN/CLOSE	CONTROL POINT ADJUSTMENT	PROPORTIONAL CONTROL	CONTACT CLOSURE	PULSE	DIFFERENTIAL PIPES SWITCH	PRESSURE SWITCH	AUXILIARY CONTACT	GENERAL ALARM	TEMPERATURE (°F)	% RELATIVE HUMIDITY	RESISTIVITY	POSITION SENSOR	FLOW	CONTACT CLOSURE—DRY FILTER	CONTACT CLOSURE—EQUIPMENT FAILURE	HIGH LIMIT	LOW LIMIT	RUN TIME	DUTY CYCLING	START/STOP	ECONOMIZER OFF/AUTO	REHEAT COIL RESET	LEAD/LAG	CHILLER WATER RESET	FAILURE MODE
DI WATER SYSTEMS	X					X																							
TOWER WATER / CHILLED RETURN CONTROL VALVE						X																							
PUMP – START/STOP		X																						X					
PUMP – STATUS									X									X			X								
PUMP – START/STOP (STAND-BY)		X																						X					
PUMP – STATUS (STAND-BY)									X									X			X								
DI WATER SUPPLY TEMPERATURE													X								X	X							
DI RESISTIVITY – MAIN LOOP															X					X	X								
DI RESISTIVITY – POLISHING LOOP															X					X	X								



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NUMBER  
SECTION  
DETAIL

DRAWING ON WHICH SECTION OR DETAIL IS SHOWN OR TAKEN

SECTION AND DETAIL KEY

THIS DOCUMENT  
CONTROLLED BY




CHANGE CONTROL  
SYSTEM 3

ENGINEERING  
PROCEDURE SNS-ENG-0001

[illegible]

	RPE
FOR REFERENCE	
ONLY	

DSN	M.KEHOE	10/26/01
DRW	J.STEIN	10/26/01
CHK	B.JOHNSON	10/26/01
DEPT		
PE		
PJ		
REQ		
UTB		
APPROVALS		

 <p><b>Knight Jacobs</b> 701 Knight Jacobs Joint Venture 701 Scarborough Road, MS 8253 Oak Ridge, TN 37830  865-241-9433 fax 865-241-3400</p>	<p style="font-size: 24pt; font-weight: bold;">108030700-P8E-8700-A068</p> <div style="display: flex; justify-content: space-between; align-items: center;"> <div style="width: 40%;">  <p><b>KNIGHT</b> Knight Advanced Technology  546 Neil Roadway, Street Chapel, N. 3005</p> </div> <div style="width: 55%; text-align: center;"> <p style="font-size: 18pt; font-weight: bold;">Oak Ridge National Laboratory</p> <p>managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT CONTRACT DE-AC05-84OR21400 ORNL/UT-BATTELLE, LLC, at Oak Ridge, Tennessee</p> </div> </div>
 <p style="font-size: 18pt; font-weight: bold;">PROJECT NAME:</p> <p style="font-size: 24pt; font-weight: bold;">SPALLATION NEUTRON SOURCE</p> <p style="font-size: 24pt; font-weight: bold;">TARGET BUILDING</p> <p style="font-size: 24pt; font-weight: bold;">DI WATER CONTROL DIAGRAM</p>	